

Work Order ID 148854

\*148854\*

Page 1

Tuesday, July 12, 2016 8:49:51 AM

Item ID: D412-786-013

Accept

\*N900040100\*

Setup Start \*NS1\*

Revision ID:

Stop \*NS2\*

Item Name: Fwd Hardpoint Installation

Start Date: 7/21/2016 Start Qty: 1.00

\*1\*

Cust Item ID:

Required Date: 7/27/2016 Req'd Qty: 1.00

\*1\*

Customer:

Reference:

Approvals: Process Plan: DAS 21 Date: JUL 13 2016 Tooling: \_\_\_\_\_ Date: \_\_\_\_\_  
QC: 9-89 Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Run Start \*NR1\*

Stop \*NR2\*

| Sequence ID/<br>Work Center ID | Operation<br>Description | Set Up/<br>Run Hours | Tool ID | Tool # | Plan<br>Code | Accept<br>Qty | Reject<br>Qty | Reject<br>Number | Insp.<br>Stamp |
|--------------------------------|--------------------------|----------------------|---------|--------|--------------|---------------|---------------|------------------|----------------|
|--------------------------------|--------------------------|----------------------|---------|--------|--------------|---------------|---------------|------------------|----------------|

|            |              |  |  |  |  |  |  |  |  |
|------------|--------------|--|--|--|--|--|--|--|--|
| Draw Nbr   | Revision Nbr |  |  |  |  |  |  |  |  |
| D412-786-1 | C            |  |  |  |  |  |  |  |  |

100 Document Control 0.00  
\*100\* DOCUMENT CONTROL  
DC Memo 0.00  
Doc.Control -USB or Paperwork Photocopy bluefile and create labels per PPP D412-786-013 chg001

DAS  
27  
9-89  
AUG 25 2016

110 Pick Kit 0.00

\*110\* Packaging Memo 0.00  
Packaging

AUG 19 2016  
DAS  
28  
9-89

120 QC4- 100% Inspect kits for completeness 0.00

\*120\* QC Memo 0.00  
Quality Control

DAS  
27  
9-89  
AUG 25 2016

DQA: \_\_\_\_\_ Date: \_\_\_\_\_

**WORK ORDER NON-CONFORMANCE / UPDATE**

QA Closed: \_\_\_\_\_ Date: \_\_\_\_\_

Work Order update only ☐

|                                                              |                                             |                                                                                                                                                                                    |                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                           |                                 |                                   |                                                                                                                    |                                 |                                        |                                             |                                   |                                       |                                                |                                    |                                |                                               |                                        |                                   |                                 |                                               |                               |                                         |                                       |                                   |                                                 |                                                            |                                             |                                            |                                   |                                          |                                |                                        |                                          |                                     |                                             |                                           |                                   |                                      |                                  |                                  |                                           |                                  |                                     |                                        |                                     |                                 |                              |                                              |                                             |                                                          |                                       |                                  |                                     |                                              |                                        |                                      |                                                |                                           |                                           |                                                |                                  |  |
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| Work Order: _____<br><br>Part No. _____<br><br>NCR No. _____ |                                             | <b>DISPOSITION</b><br><br>Rework <input type="checkbox"/><br>Scrap <input type="checkbox"/><br>Use-as-is <input type="checkbox"/><br>Suspected Unapproved <input type="checkbox"/> |                                           | <b>AGAINST DEPARTMENT/PROCESS</b><br><br><div style="display: flex; justify-content: space-between;"> <div>             Skid-tube <input type="checkbox"/><br/>             Machining <input type="checkbox"/><br/>             Thermoforming <input type="checkbox"/><br/>             Large Fab <input type="checkbox"/> </div> <div>             Cross tube <input type="checkbox"/><br/>             Small Fab <input type="checkbox"/><br/>             Finishing <input type="checkbox"/><br/>             Composite <input type="checkbox"/> </div> <div>             Water Jet <input type="checkbox"/><br/>             Prod. Eng. Coord. <input type="checkbox"/><br/>             Rec/Store/Packaging <input type="checkbox"/><br/>             Supplier <input type="checkbox"/> </div> <div>             Engineering <input type="checkbox"/><br/>             Quality <input type="checkbox"/><br/>             Other <input type="checkbox"/> </div> </div> |                                           |                                 |                                   |                                                                                                                    |                                 |                                        |                                             |                                   |                                       |                                                |                                    |                                |                                               |                                        |                                   |                                 |                                               |                               |                                         |                                       |                                   |                                                 |                                                            |                                             |                                            |                                   |                                          |                                |                                        |                                          |                                     |                                             |                                           |                                   |                                      |                                  |                                  |                                           |                                  |                                     |                                        |                                     |                                 |                              |                                              |                                             |                                                          |                                       |                                  |                                     |                                              |                                        |                                      |                                                |                                           |                                           |                                                |                                  |  |
| Date :                                                       |                                             | Step #:                                                                                                                                                                            |                                           | QTY Effective :                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                           |                                 | MRB (QSI042) Approval             |                                                                                                                    |                                 |                                        |                                             |                                   |                                       |                                                |                                    |                                |                                               |                                        |                                   |                                 |                                               |                               |                                         |                                       |                                   |                                                 |                                                            |                                             |                                            |                                   |                                          |                                |                                        |                                          |                                     |                                             |                                           |                                   |                                      |                                  |                                  |                                           |                                  |                                     |                                        |                                     |                                 |                              |                                              |                                             |                                                          |                                       |                                  |                                     |                                              |                                        |                                      |                                                |                                           |                                           |                                                |                                  |  |
| Description Work Order Deviation                             |                                             |                                                                                                                                                                                    |                                           | Disposition                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                           |                                 |                                   | Completed By<br><br><br>Lead hand / Supervisor<br>Approval Verification<br><br><br>QC / QA Coordinator<br>Approval |                                 |                                        |                                             |                                   |                                       |                                                |                                    |                                |                                               |                                        |                                   |                                 |                                               |                               |                                         |                                       |                                   |                                                 |                                                            |                                             |                                            |                                   |                                          |                                |                                        |                                          |                                     |                                             |                                           |                                   |                                      |                                  |                                  |                                           |                                  |                                     |                                        |                                     |                                 |                              |                                              |                                             |                                                          |                                       |                                  |                                     |                                              |                                        |                                      |                                                |                                           |                                           |                                                |                                  |  |
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|                                                              |                                             |                                                                                                                                                                                    |                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                           |                                 |                                   |                                                                                                                    |                                 |                                        |                                             |                                   |                                       |                                                |                                    |                                |                                               |                                        |                                   |                                 |                                               |                               |                                         |                                       |                                   |                                                 |                                                            |                                             |                                            |                                   |                                          |                                |                                        |                                          |                                     |                                             |                                           |                                   |                                      |                                  |                                  |                                           |                                  |                                     |                                        |                                     |                                 |                              |                                              |                                             |                                                          |                                       |                                  |                                     |                                              |                                        |                                      |                                                |                                           |                                           |                                                |                                  |  |
| Root Cause                                                   |                                             | FAULT CATEGORY                                                                                                                                                                     |                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                           |                                 |                                   |                                                                                                                    |                                 |                                        |                                             |                                   |                                       |                                                |                                    |                                |                                               |                                        |                                   |                                 |                                               |                               |                                         |                                       |                                   |                                                 |                                                            |                                             |                                            |                                   |                                          |                                |                                        |                                          |                                     |                                             |                                           |                                   |                                      |                                  |                                  |                                           |                                  |                                     |                                        |                                     |                                 |                              |                                              |                                             |                                                          |                                       |                                  |                                     |                                              |                                        |                                      |                                                |                                           |                                           |                                                |                                  |  |
| Environment <input type="checkbox"/>                         | No Re-verification <input type="checkbox"/> | Pressure/Forced <input type="checkbox"/>                                                                                                                                           | Temperature/Cure <input type="checkbox"/> | Power Loss/Surge <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Positioned Wrong <input type="checkbox"/> | Design <input type="checkbox"/> | Operator <input type="checkbox"/> | Bending <input type="checkbox"/>                                                                                   | Set-up <input type="checkbox"/> | Folio/Program <input type="checkbox"/> | Outside Dimensions <input type="checkbox"/> | Doc/Data <input type="checkbox"/> | Offset/Setup <input type="checkbox"/> | Centre Not Concentric <input type="checkbox"/> | BOM/Route <input type="checkbox"/> | Grain <input type="checkbox"/> | Over/Under tolerance <input type="checkbox"/> | Equip/Tooling <input type="checkbox"/> | Supplier <input type="checkbox"/> | Cracks <input type="checkbox"/> | Broken/Damage/Defect <input type="checkbox"/> | Weld <input type="checkbox"/> | Part Incorrect <input type="checkbox"/> | Handling/Pre <input type="checkbox"/> | Training <input type="checkbox"/> | Crimp/Kink/Ripple/Wave <input type="checkbox"/> | Inspection Incomplete/Unqualified <input type="checkbox"/> | Wrong Stock Pulled <input type="checkbox"/> | Part Lost/Missing <input type="checkbox"/> | Material <input type="checkbox"/> | Use for Testing <input type="checkbox"/> | Cuffs <input type="checkbox"/> | Contamination <input type="checkbox"/> | Out of Sequence <input type="checkbox"/> | Part Moved <input type="checkbox"/> | Internal Transport <input type="checkbox"/> | Poor Information <input type="checkbox"/> | Crushing <input type="checkbox"/> | Countersink <input type="checkbox"/> | Off-set <input type="checkbox"/> | Drawing <input type="checkbox"/> | Tribal Knowledge <input type="checkbox"/> | Rushing <input type="checkbox"/> | Heat Treat <input type="checkbox"/> | Cut Too Short <input type="checkbox"/> | Mislabeled <input type="checkbox"/> | Finish <input type="checkbox"/> | LOA <input type="checkbox"/> | Product Improvement <input type="checkbox"/> | Wave/Twist in Tube <input type="checkbox"/> | Instructions Incomplete/Unclear <input type="checkbox"/> | Fit/Function <input type="checkbox"/> | Misread <input type="checkbox"/> | Substation <input type="checkbox"/> | Process Improvement <input type="checkbox"/> | Marks/Chatter <input type="checkbox"/> | Drill Holes <input type="checkbox"/> | Misaligned/off center <input type="checkbox"/> | Turning Sequence <input type="checkbox"/> | Past Expiry Date <input type="checkbox"/> | Manufacturing Process <input type="checkbox"/> | OTHER : <input type="checkbox"/> |  |
| Misidentified <input type="checkbox"/>                       | Past Due <input type="checkbox"/>           |                                                                                                                                                                                    |                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                           |                                 |                                   |                                                                                                                    |                                 |                                        |                                             |                                   |                                       |                                                |                                    |                                |                                               |                                        |                                   |                                 |                                               |                               |                                         |                                       |                                   |                                                 |                                                            |                                             |                                            |                                   |                                          |                                |                                        |                                          |                                     |                                             |                                           |                                   |                                      |                                  |                                  |                                           |                                  |                                     |                                        |                                     |                                 |                              |                                              |                                             |                                                          |                                       |                                  |                                     |                                              |                                        |                                      |                                                |                                           |                                           |                                                |                                  |  |

Tuesday, July 12, 2016 8:49:51 AM

**Item ID:** D412-786-013

**Accept**

**\*N900040100\***

Setup Start \*NS1\*

Revision ID:

**Item Name:** Fwd Hardpoint Installation

Stop \*NS2\*

**Start Date:** 7/21/2016      **Start Qty:** 1.00      **\*1\***

**Cust Item ID:**

**Required Date:** 7/27/2016      **Req'd Qty:** 1.00      **\*1\***

**Customer:**

**Reference:**

**Approvals:**      **Process Plan:** \_\_\_\_\_      **Date:** \_\_\_\_\_      **Tooling:** \_\_\_\_\_      **Date:** \_\_\_\_\_

Run Start \*NR1\*

QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Stop **\*NR2\***

| Sequence ID/<br>Work Center ID | Operation<br>Description | Set Up/<br>Run Hours | Tool ID | Tool # | Plan<br>Code | Accept<br>Qty | Reject<br>Qty | Reject<br>Number | Insp.<br>Stamp |
|--------------------------------|--------------------------|----------------------|---------|--------|--------------|---------------|---------------|------------------|----------------|
|--------------------------------|--------------------------|----------------------|---------|--------|--------------|---------------|---------------|------------------|----------------|

130

0.00

**\*130\***

## Packaging

0.00

## Packaging

## Memo

### Packaging

Identify and pack for shipping as per PPP D412-786-013

Location:

PPP Rev: \_\_\_\_\_

**DAS**  
**28**  
**9.85**

AUG 24 2016

140

QC21- Final Inspection - Work Order Release

0.00

**\*140\***

OC

## Memo

0.00

## Quality Control

*[Handwritten signature]*

AUG 26 2016

2m

16/08/25.

DQA: \_\_\_\_\_ Date: \_\_\_\_\_

**WORK ORDER NON-CONFORMANCE / UPDATE**

QA Closed: \_\_\_\_\_ Date: \_\_\_\_\_

Work Order update only ☐

|                                                                                                                                                                                               |  |                                                                                                                                                                                    |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  |  |                       |              |  |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|-----------------------|--------------|--|
| Work Order: _____<br><br>Part No. _____<br><br>NCR No. _____                                                                                                                                  |  | <b>DISPOSITION</b><br><br>Rework <input type="checkbox"/><br>Scrap <input type="checkbox"/><br>Use-as-is <input type="checkbox"/><br>Suspected Unapproved <input type="checkbox"/> |  | <b>AGAINST DEPARTMENT/PROCESS</b><br><br><div style="display: flex; justify-content: space-between;"> <div>           Skid-tube <input type="checkbox"/><br/>           Machining <input type="checkbox"/><br/>           Thermoforming <input type="checkbox"/><br/>           Large Fab <input type="checkbox"/> </div> <div>           Cross tube <input type="checkbox"/><br/>           Small Fab <input type="checkbox"/><br/>           Finishing <input type="checkbox"/><br/>           Composite <input type="checkbox"/> </div> <div>           Water Jet <input type="checkbox"/><br/>           Prod. Eng. Coord. <input type="checkbox"/><br/>           Rec/Store/Packaging <input type="checkbox"/><br/>           Supplier <input type="checkbox"/> </div> <div>           Engineering <input type="checkbox"/><br/>           Quality <input type="checkbox"/><br/>           Other <input type="checkbox"/> </div> </div> |  |  |                       |              |  |
| Date : _____                                                                                                                                                                                  |  | Step #: _____                                                                                                                                                                      |  | QTY Effective : _____                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |  |  | MRB (QSI042) Approval |              |  |
| Description Work Order Deviation                                                                                                                                                              |  |                                                                                                                                                                                    |  | Disposition                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |  |                       | Completed By |  |
| <div style="position: absolute; top: 10px; left: 10px; font-size: 24px; opacity: 0.3;">3</div> <div style="position: absolute; top: 40px; left: 10px; font-size: 24px; opacity: 0.3;">4</div> |  |                                                                                                                                                                                    |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  |  |                       |              |  |

*Tuesday, July 12, 2016 8:49:51 AM*

**\*148854\***

**\*D412-786-013\***

**Start Date:** 7/21/2016**Required Date:** 7/27/2016

**Start Qty: 1.00**

**Required Qty: 1.00**

**Comments:** IPP REV:A NEW ISSUE 12-04-27 JLM VERIFIED BY:DD

| Component Item ID/<br>Item Name                                           | Replacement<br>Item ID | Mfg/<br>Purch | Bin<br>Item | Primary<br>Location | Last<br>Location | Route<br>Seq ID | Unit of<br>Measure | Qty on<br>Hand  | Qty per Kit | Total<br>Qty | Qty<br>Issued | Date<br>Issued   | Status                           |
|---------------------------------------------------------------------------|------------------------|---------------|-------------|---------------------|------------------|-----------------|--------------------|-----------------|-------------|--------------|---------------|------------------|----------------------------------|
| D3870-041<br><b>*D3870-041*</b><br>Hardpoint, Fwd LH<br>DAS<br>27<br>9-89 |                        | Manufactured  | No          |                     |                  |                 | Each               | 1.0000          |             | 1<br>148941  |               | DAS<br>6<br>9-89 | DAS<br>28<br>9-89                |
|                                                                           |                        |               |             | <u>Location</u>     |                  |                 | <u>Loc Qty</u>     | <u>Loc Code</u> |             |              |               |                  |                                  |
|                                                                           |                        |               |             | ST056               |                  |                 | 1                  |                 |             |              |               |                  |                                  |
|                                                                           |                        |               |             |                     | 144561           |                 | 1                  |                 |             |              |               |                  |                                  |
| D3870-042<br><b>*D3870-042*</b><br>Hardpoint, Fwd RH<br>DAS<br>27<br>9-89 |                        | Manufactured  | No          |                     |                  |                 | Each               | 1.0000          |             | 1<br>148850  |               | DAS<br>6<br>9-89 | AUG 23 2016<br>DAS<br>28<br>9-89 |
|                                                                           |                        |               |             | <u>Location</u>     |                  |                 | <u>Loc Qty</u>     | <u>Loc Code</u> |             |              |               |                  |                                  |
|                                                                           |                        |               |             | ST056               |                  |                 | 1                  |                 |             |              |               |                  |                                  |
|                                                                           |                        |               |             |                     | 144562           |                 | 1                  |                 |             |              |               |                  |                                  |
| D3870-5<br><b>*D3870-5*</b><br>Mount, Fwd Upper<br>DAS<br>27<br>9-89      |                        | Manufactured  | No          |                     |                  |                 | Each               | 3.0000          |             | 1            |               |                  | DAS<br>28<br>9-89                |
|                                                                           |                        |               |             | <u>Location</u>     |                  |                 | <u>Loc Qty</u>     | <u>Loc Code</u> |             |              |               |                  |                                  |
|                                                                           |                        |               |             | ST056               |                  |                 | 3                  |                 |             |              |               |                  |                                  |
|                                                                           |                        |               |             |                     | 121992           |                 | 3                  |                 |             |              |               |                  |                                  |
| D3871-1<br><b>*D3871-1*</b><br>Doubler<br>DAS<br>27<br>9-89               |                        | Manufactured  | No          |                     |                  |                 | Each               | 2.0000          |             | 1            |               |                  | DAS<br>28<br>9-89                |
|                                                                           |                        |               |             | <u>Location</u>     |                  |                 | <u>Loc Qty</u>     | <u>Loc Code</u> |             |              |               |                  |                                  |
|                                                                           |                        |               |             | ST056               |                  |                 | 2                  |                 |             |              |               |                  |                                  |
|                                                                           |                        |               |             |                     | 111907           |                 | 2                  |                 |             |              |               |                  | AUG 19 2016                      |

DQA: \_\_\_\_\_ Date: \_\_\_\_\_

## WORK ORDER NON-CONFORMANCE / UPDATE



QA Closed: \_\_\_\_\_ Date: \_\_\_\_\_

Work Order update only ☐

|                                                              |                                 |                                                                                                                                                                                    |                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                   |                                             |                                           |                                                                                                                    |                                     |                                           |                                        |                                             |                                   |                                       |                                   |                                   |                                          |                                           |                                  |                                              |                                              |                                                |                                   |                                          |                                  |                                                |                                 |                                                 |                                |                                   |                                     |                                             |                                        |                                           |                                 |                                    |                                               |                                                            |                                        |                                      |                                        |                                                          |                                      |                                           |                                        |                                |                               |                                             |                                          |                                  |                                     |                                       |                                                |                                           |                                             |                                               |                                         |                                            |                                     |                                  |                                 |                                  |                                           |
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| Work Order: _____<br><br>Part No. _____<br><br>NCR No. _____ |                                 | <b>DISPOSITION</b><br><br>Rework <input type="checkbox"/><br>Scrap <input type="checkbox"/><br>Use-as-is <input type="checkbox"/><br>Suspected Unapproved <input type="checkbox"/> |                                        | <b>AGAINST DEPARTMENT/PROCESS</b><br><br><div style="display: flex; justify-content: space-between;"> <div>             Skid-tube <input type="checkbox"/><br/>             Machining <input type="checkbox"/><br/>             Thermoforming <input type="checkbox"/><br/>             Large Fab <input type="checkbox"/> </div> <div>             Cross tube <input type="checkbox"/><br/>             Small Fab <input type="checkbox"/><br/>             Finishing <input type="checkbox"/><br/>             Composite <input type="checkbox"/> </div> <div>             Water Jet <input type="checkbox"/><br/>             Prod. Eng. Coord. <input type="checkbox"/><br/>             Rec/Store/Packaging <input type="checkbox"/><br/>             Supplier <input type="checkbox"/> </div> <div>             Engineering <input type="checkbox"/><br/>             Quality <input type="checkbox"/><br/>             Other <input type="checkbox"/> </div> </div> |                                   |                                             |                                           |                                                                                                                    |                                     |                                           |                                        |                                             |                                   |                                       |                                   |                                   |                                          |                                           |                                  |                                              |                                              |                                                |                                   |                                          |                                  |                                                |                                 |                                                 |                                |                                   |                                     |                                             |                                        |                                           |                                 |                                    |                                               |                                                            |                                        |                                      |                                        |                                                          |                                      |                                           |                                        |                                |                               |                                             |                                          |                                  |                                     |                                       |                                                |                                           |                                             |                                               |                                         |                                            |                                     |                                  |                                 |                                  |                                           |
| Date :                                                       |                                 | Step #:                                                                                                                                                                            |                                        | QTY Effective :                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                   |                                             | MRB (QSI042) Approval                     |                                                                                                                    |                                     |                                           |                                        |                                             |                                   |                                       |                                   |                                   |                                          |                                           |                                  |                                              |                                              |                                                |                                   |                                          |                                  |                                                |                                 |                                                 |                                |                                   |                                     |                                             |                                        |                                           |                                 |                                    |                                               |                                                            |                                        |                                      |                                        |                                                          |                                      |                                           |                                        |                                |                               |                                             |                                          |                                  |                                     |                                       |                                                |                                           |                                             |                                               |                                         |                                            |                                     |                                  |                                 |                                  |                                           |
| Description Work Order Deviation                             |                                 |                                                                                                                                                                                    |                                        | Disposition                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                   |                                             |                                           | Completed By<br><br><br>Lead hand / Supervisor<br>Approval Verification<br><br><br>QC / QA Coordinator<br>Approval |                                     |                                           |                                        |                                             |                                   |                                       |                                   |                                   |                                          |                                           |                                  |                                              |                                              |                                                |                                   |                                          |                                  |                                                |                                 |                                                 |                                |                                   |                                     |                                             |                                        |                                           |                                 |                                    |                                               |                                                            |                                        |                                      |                                        |                                                          |                                      |                                           |                                        |                                |                               |                                             |                                          |                                  |                                     |                                       |                                                |                                           |                                             |                                               |                                         |                                            |                                     |                                  |                                 |                                  |                                           |
|                                                              |                                 |                                                                                                                                                                                    |                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                   |                                             |                                           |                                                                                                                    |                                     |                                           |                                        |                                             |                                   |                                       |                                   |                                   |                                          |                                           |                                  |                                              |                                              |                                                |                                   |                                          |                                  |                                                |                                 |                                                 |                                |                                   |                                     |                                             |                                        |                                           |                                 |                                    |                                               |                                                            |                                        |                                      |                                        |                                                          |                                      |                                           |                                        |                                |                               |                                             |                                          |                                  |                                     |                                       |                                                |                                           |                                             |                                               |                                         |                                            |                                     |                                  |                                 |                                  |                                           |
|                                                              |                                 |                                                                                                                                                                                    |                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                   |                                             |                                           |                                                                                                                    |                                     |                                           |                                        |                                             |                                   |                                       |                                   |                                   |                                          |                                           |                                  |                                              |                                              |                                                |                                   |                                          |                                  |                                                |                                 |                                                 |                                |                                   |                                     |                                             |                                        |                                           |                                 |                                    |                                               |                                                            |                                        |                                      |                                        |                                                          |                                      |                                           |                                        |                                |                               |                                             |                                          |                                  |                                     |                                       |                                                |                                           |                                             |                                               |                                         |                                            |                                     |                                  |                                 |                                  |                                           |
| Root Cause                                                   |                                 | FAULT CATEGORY                                                                                                                                                                     |                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                   |                                             |                                           |                                                                                                                    |                                     |                                           |                                        |                                             |                                   |                                       |                                   |                                   |                                          |                                           |                                  |                                              |                                              |                                                |                                   |                                          |                                  |                                                |                                 |                                                 |                                |                                   |                                     |                                             |                                        |                                           |                                 |                                    |                                               |                                                            |                                        |                                      |                                        |                                                          |                                      |                                           |                                        |                                |                               |                                             |                                          |                                  |                                     |                                       |                                                |                                           |                                             |                                               |                                         |                                            |                                     |                                  |                                 |                                  |                                           |
| Environment <input type="checkbox"/>                         | Design <input type="checkbox"/> | Doc/Data <input type="checkbox"/>                                                                                                                                                  | Equip/Tooling <input type="checkbox"/> | Handling/Pre <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Material <input type="checkbox"/> | Internal Transport <input type="checkbox"/> | Tribal Knowledge <input type="checkbox"/> | LOA <input type="checkbox"/>                                                                                       | Substation <input type="checkbox"/> | Past Expiry Date <input type="checkbox"/> | Misidentified <input type="checkbox"/> | No Re-verification <input type="checkbox"/> | Operator <input type="checkbox"/> | Offset/Setup <input type="checkbox"/> | Supplier <input type="checkbox"/> | Training <input type="checkbox"/> | Use for Testing <input type="checkbox"/> | Poor Information <input type="checkbox"/> | Rushing <input type="checkbox"/> | Product Improvement <input type="checkbox"/> | Process Improvement <input type="checkbox"/> | Manufacturing Process <input type="checkbox"/> | Past Due <input type="checkbox"/> | Pressure/Forced <input type="checkbox"/> | Bending <input type="checkbox"/> | Centre Not Concentric <input type="checkbox"/> | Cracks <input type="checkbox"/> | Crimp/Kink/Ripple/Wave <input type="checkbox"/> | Cuffs <input type="checkbox"/> | Crushing <input type="checkbox"/> | Heat Treat <input type="checkbox"/> | Wave/Twist in Tube <input type="checkbox"/> | Marks/Chatter <input type="checkbox"/> | Temperature/Cure <input type="checkbox"/> | Set-up <input type="checkbox"/> | BOM/Route <input type="checkbox"/> | Broken/Damage/Defect <input type="checkbox"/> | Inspection Incomplete/Unqualified <input type="checkbox"/> | Contamination <input type="checkbox"/> | Countersink <input type="checkbox"/> | Cut Too Short <input type="checkbox"/> | Instructions Incomplete/Unclear <input type="checkbox"/> | Drill Holes <input type="checkbox"/> | Power Loss/Surge <input type="checkbox"/> | Folio/Program <input type="checkbox"/> | Grain <input type="checkbox"/> | Weld <input type="checkbox"/> | Wrong Stock Pulled <input type="checkbox"/> | Out of Sequence <input type="checkbox"/> | Off-set <input type="checkbox"/> | Mislabeled <input type="checkbox"/> | Fit/Function <input type="checkbox"/> | Misaligned/off center <input type="checkbox"/> | Positioned Wrong <input type="checkbox"/> | Outside Dimensions <input type="checkbox"/> | Over/Under tolerance <input type="checkbox"/> | Part Incorrect <input type="checkbox"/> | Part Lost/Missing <input type="checkbox"/> | Part Moved <input type="checkbox"/> | Drawing <input type="checkbox"/> | Finish <input type="checkbox"/> | Misread <input type="checkbox"/> | Turning Sequence <input type="checkbox"/> |
|                                                              |                                 |                                                                                                                                                                                    |                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                   |                                             |                                           |                                                                                                                    |                                     |                                           |                                        |                                             |                                   |                                       |                                   |                                   |                                          |                                           |                                  |                                              |                                              |                                                |                                   | OTHER : <input type="checkbox"/>         |                                  |                                                |                                 |                                                 |                                |                                   |                                     |                                             |                                        |                                           |                                 |                                    |                                               |                                                            |                                        |                                      |                                        |                                                          |                                      |                                           |                                        |                                |                               |                                             |                                          |                                  |                                     |                                       |                                                |                                           |                                             |                                               |                                         |                                            |                                     |                                  |                                 |                                  |                                           |

# Picklist Print

Tuesday, July 12, 2016 8:49:51 AM

Work Order ID: 148854

**\*148854\***

Parent Item: D412-786-013

**\*D412-786-013\***

Parent Item Name: Fwd Hardpoint Installation

Start Date: 7/21/2016

Required Date: 7/27/2016

Start Qty: 1.00

Required Qty: 1.00

D3871-2

Manufactured No

Each

2.0000

**\*D3871-2\***

Doubler

\*\*

DAS  
28  
9-89

DAS  
27  
9-89

MS21042L3

Purchased No

Each

2,638.000

**\*MS21042L3\***

Nut

\*\*

DAS  
28  
9-89

Location

Loc Qty

Loc Code

ST056

2

111908

2

10

Location

Loc Qty

Loc Code

CCK007

600

m135056

600

FP001

14

m133790

14

GA

127

m134360

127

OVER007

1200

m135135

1200

10

ST303

697

m134039

12

m134943

685

DAS  
27  
9-89

AUG 19 2016

DQA: \_\_\_\_\_ Date: \_\_\_\_\_

**WORK ORDER NON-CONFORMANCE / UPDATE**

QA Closed: \_\_\_\_\_ Date: \_\_\_\_\_

Work Order update only ☐

|                                                              |                                                |                                                                                                                                                                                    |                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                               |  |                       |                                                 |  |
|--------------------------------------------------------------|------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------|--|-----------------------|-------------------------------------------------|--|
| Work Order: _____<br><br>Part No. _____<br><br>NCR No. _____ |                                                | <b>DISPOSITION</b><br><br>Rework <input type="checkbox"/><br>Scrap <input type="checkbox"/><br>Use-as-is <input type="checkbox"/><br>Suspected Unapproved <input type="checkbox"/> |                                                            | <b>AGAINST DEPARTMENT/PROCESS</b><br><br><div style="display: flex; justify-content: space-between;"> <div>             Skid-tube <input type="checkbox"/><br/>             Machining <input type="checkbox"/><br/>             Thermoforming <input type="checkbox"/><br/>             Large Fab <input type="checkbox"/> </div> <div>             Cross tube <input type="checkbox"/><br/>             Small Fab <input type="checkbox"/><br/>             Finishing <input type="checkbox"/><br/>             Composite <input type="checkbox"/> </div> <div>             Water Jet <input type="checkbox"/><br/>             Prod. Eng. Coord. <input type="checkbox"/><br/>             Rec/Store/Packaging <input type="checkbox"/><br/>             Supplier <input type="checkbox"/> </div> <div>             Engineering <input type="checkbox"/><br/>             Quality <input type="checkbox"/><br/>             Other <input type="checkbox"/> </div> </div> |                                               |  |                       |                                                 |  |
| Date : _____                                                 |                                                | Step #: _____                                                                                                                                                                      |                                                            | QTY Effective : _____                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                               |  | MRB (QSI042) Approval |                                                 |  |
| Description Work Order Deviation                             |                                                |                                                                                                                                                                                    |                                                            | Disposition                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                               |  |                       | Completed By                                    |  |
|                                                              |                                                |                                                                                                                                                                                    |                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                               |  |                       | Lead hand / Supervisor<br>Approval Verification |  |
|                                                              |                                                |                                                                                                                                                                                    |                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                               |  |                       | QC / QA Coordinator<br>Approval                 |  |
|                                                              |                                                |                                                                                                                                                                                    |                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                               |  |                       |                                                 |  |
| Root Cause                                                   |                                                | FAULT CATEGORY                                                                                                                                                                     |                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                               |  |                       |                                                 |  |
| Environment <input type="checkbox"/>                         | No Re-verification <input type="checkbox"/>    | Pressure/Forced <input type="checkbox"/>                                                                                                                                           | Temperature/Cure <input type="checkbox"/>                  | Power Loss/Surge <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Positioned Wrong <input type="checkbox"/>     |  |                       |                                                 |  |
| Design <input type="checkbox"/>                              | Operator <input type="checkbox"/>              | Bending <input type="checkbox"/>                                                                                                                                                   | Set-up <input type="checkbox"/>                            | Folio/Program <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Outside Dimensions <input type="checkbox"/>   |  |                       |                                                 |  |
| Doc/Data <input type="checkbox"/>                            | Offset/Setup <input type="checkbox"/>          | Centre Not Concentric <input type="checkbox"/>                                                                                                                                     | BOM/Route <input type="checkbox"/>                         | Grain <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Over/Under tolerance <input type="checkbox"/> |  |                       |                                                 |  |
| Equip/Tooling <input type="checkbox"/>                       | Supplier <input type="checkbox"/>              | Cracks <input type="checkbox"/>                                                                                                                                                    | Broken/Damage/Defect <input type="checkbox"/>              | Weld <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Part Incorrect <input type="checkbox"/>       |  |                       |                                                 |  |
| Handling/Pre <input type="checkbox"/>                        | Training <input type="checkbox"/>              | Crimp/Kink/Ripple/Wave <input type="checkbox"/>                                                                                                                                    | Inspection Incomplete/Unqualified <input type="checkbox"/> | Wrong Stock Pulled <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Part Lost/Missing <input type="checkbox"/>    |  |                       |                                                 |  |
| Material <input type="checkbox"/>                            | Use for Testing <input type="checkbox"/>       | Cuffs <input type="checkbox"/>                                                                                                                                                     | Contamination <input type="checkbox"/>                     | Out of Sequence <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Part Moved <input type="checkbox"/>           |  |                       |                                                 |  |
| Internal Transport <input type="checkbox"/>                  | Poor Information <input type="checkbox"/>      | Crushing <input type="checkbox"/>                                                                                                                                                  | Countersink <input type="checkbox"/>                       | Off-set <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Drawing <input type="checkbox"/>              |  |                       |                                                 |  |
| Tribal Knowledge <input type="checkbox"/>                    | Rushing <input type="checkbox"/>               | Heat Treat <input type="checkbox"/>                                                                                                                                                | Cut Too Short <input type="checkbox"/>                     | Mislabeled <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Finish <input type="checkbox"/>               |  |                       |                                                 |  |
| LOA <input type="checkbox"/>                                 | Product Improvement <input type="checkbox"/>   | Wave/Twist in Tube <input type="checkbox"/>                                                                                                                                        | Instructions Incomplete/Unclear <input type="checkbox"/>   | Fit/Function <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Misread <input type="checkbox"/>              |  |                       |                                                 |  |
| Substation <input type="checkbox"/>                          | Process Improvement <input type="checkbox"/>   | Marks/Chatter <input type="checkbox"/>                                                                                                                                             | Drill Holes <input type="checkbox"/>                       | Misaligned/off center <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Turning Sequence <input type="checkbox"/>     |  |                       |                                                 |  |
| Past Expiry Date <input type="checkbox"/>                    | Manufacturing Process <input type="checkbox"/> | OTHER : _____                                                                                                                                                                      |                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                               |  |                       |                                                 |  |
| Misidentified <input type="checkbox"/>                       | Past Due <input type="checkbox"/>              |                                                                                                                                                                                    |                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                               |  |                       |                                                 |  |



# Picklist Print

Tuesday, July 12, 2016 8:49:51 AM

Page 3

Work Order ID: 148854

**\*148854\***

Parent Item: D412-786-013

**\*D412-786-013\***

Parent Item Name: Fwd Hardpoint Installation

Start Date: 7/21/2016

Required Date: 7/27/2016

Start Qty: 1.00

Required Qty: 1.00

MS27039-1-11

Purchased

No

Each

150.0000

**\*MS27039-1-11\***

Screw

\*\*

8

PC

DAS  
28  
9-89

Location

Loc Qty

Loc Code

GA

20

125654

13

9662

7

over006

50

m134738

50

ST280

80

124326

80

8

PC

DAS  
28  
9-89

MS27039-1-12

Purchased

No

Each

74.0000

**\*MS27039-1-12\***

Screw

\*\*

1

PC

DAS  
28  
9-89

Location

Loc Qty

Loc Code

over006

50

m134294

50

ST280

24

m133988

24

1

PC

DAS  
28  
9-89

MS27039-1-14

Purchased

No

Each

746.0000

**\*MS27039-1-14\***

Screw

\*\*

1

PC

DAS  
28  
9-89

Location

Loc Qty

Loc Code

GA

94

120449

94

over006

500

124326

500

ST280

152

124326

152

1

AUG 19 2016

DQA: \_\_\_\_\_ Date: \_\_\_\_\_

**WORK ORDER NON-CONFORMANCE / UPDATE**

QA Closed: \_\_\_\_\_ Date: \_\_\_\_\_

Work Order update only ☐

|                                                              |                                                |                                                                                                                                                                                    |                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                               |  |  |                                              |  |
|--------------------------------------------------------------|------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------|--|--|----------------------------------------------|--|
| Work Order: _____<br><br>Part No. _____<br><br>NCR No. _____ |                                                | <b>DISPOSITION</b><br><br>Rework <input type="checkbox"/><br>Scrap <input type="checkbox"/><br>Use-as-is <input type="checkbox"/><br>Suspected Unapproved <input type="checkbox"/> |                                                            | <b>AGAINST DEPARTMENT/PROCESS</b><br><br><div style="display: flex; justify-content: space-between;"> <div>           Skid-tube <input type="checkbox"/><br/>           Machining <input type="checkbox"/><br/>           Thermoforming <input type="checkbox"/><br/>           Large Fab <input type="checkbox"/> </div> <div>           Cross tube <input type="checkbox"/><br/>           Small Fab <input type="checkbox"/><br/>           Finishing <input type="checkbox"/><br/>           Composite <input type="checkbox"/> </div> <div>           Water Jet <input type="checkbox"/><br/>           Prod. Eng. Coord. <input type="checkbox"/><br/>           Rec/Store/Packaging <input type="checkbox"/><br/>           Supplier <input type="checkbox"/> </div> <div>           Engineering <input type="checkbox"/><br/>           Quality <input type="checkbox"/><br/>           Other <input type="checkbox"/> </div> </div> |                                               |  |  |                                              |  |
| Date :                                                       |                                                | Step #:                                                                                                                                                                            |                                                            | QTY Effective :                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                               |  |  | MRB (QSI042) Approval                        |  |
| Description Work Order Deviation                             |                                                |                                                                                                                                                                                    |                                                            | Disposition                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                               |  |  | Completed By                                 |  |
|                                                              |                                                |                                                                                                                                                                                    |                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                               |  |  | Lead hand / Supervisor Approval Verification |  |
|                                                              |                                                |                                                                                                                                                                                    |                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                               |  |  | QC / QA Coordinator Approval                 |  |
|                                                              |                                                |                                                                                                                                                                                    |                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                               |  |  |                                              |  |
| Root Cause                                                   |                                                | FAULT CATEGORY                                                                                                                                                                     |                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                               |  |  |                                              |  |
| Environment <input type="checkbox"/>                         | No Re-verification <input type="checkbox"/>    | Pressure/Forced <input type="checkbox"/>                                                                                                                                           | Temperature/Cure <input type="checkbox"/>                  | Power Loss/Surge <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Positioned Wrong <input type="checkbox"/>     |  |  |                                              |  |
| Design <input type="checkbox"/>                              | Operator <input type="checkbox"/>              | Bending <input type="checkbox"/>                                                                                                                                                   | Set-up <input type="checkbox"/>                            | Folio/Program <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Outside Dimensions <input type="checkbox"/>   |  |  |                                              |  |
| Doc/Data <input type="checkbox"/>                            | Offset/Setup <input type="checkbox"/>          | Centre Not Concentric <input type="checkbox"/>                                                                                                                                     | BOM/Route <input type="checkbox"/>                         | Grain <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Over/Under tolerance <input type="checkbox"/> |  |  |                                              |  |
| Equip/Tooling <input type="checkbox"/>                       | Supplier <input type="checkbox"/>              | Cracks <input type="checkbox"/>                                                                                                                                                    | Broken/Damage/Defect <input type="checkbox"/>              | Weld <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Part Incorrect <input type="checkbox"/>       |  |  |                                              |  |
| Handling/Pre <input type="checkbox"/>                        | Training <input type="checkbox"/>              | Crimp/Kink/Ripple/Wave <input type="checkbox"/>                                                                                                                                    | Inspection Incomplete/Unqualified <input type="checkbox"/> | Wrong Stock Pulled <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Part Lost/Missing <input type="checkbox"/>    |  |  |                                              |  |
| Material <input type="checkbox"/>                            | Use for Testing <input type="checkbox"/>       | Cuffs <input type="checkbox"/>                                                                                                                                                     | Contamination <input type="checkbox"/>                     | Out of Sequence <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Part Moved <input type="checkbox"/>           |  |  |                                              |  |
| Internal Transport <input type="checkbox"/>                  | Poor Information <input type="checkbox"/>      | Crushing <input type="checkbox"/>                                                                                                                                                  | Countersink <input type="checkbox"/>                       | Off-set <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Drawing <input type="checkbox"/>              |  |  |                                              |  |
| Tribal Knowledge <input type="checkbox"/>                    | Rushing <input type="checkbox"/>               | Heat Treat <input type="checkbox"/>                                                                                                                                                | Cut Too Short <input type="checkbox"/>                     | Mislabeled <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Finish <input type="checkbox"/>               |  |  |                                              |  |
| LOA <input type="checkbox"/>                                 | Product Improvement <input type="checkbox"/>   | Wave/Twist in Tube <input type="checkbox"/>                                                                                                                                        | Instructions Incomplete/Unclear <input type="checkbox"/>   | Fit/Function <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Misread <input type="checkbox"/>              |  |  |                                              |  |
| Substation <input type="checkbox"/>                          | Process Improvement <input type="checkbox"/>   | Marks/Chatter <input type="checkbox"/>                                                                                                                                             | Drill Holes <input type="checkbox"/>                       | Misaligned/off center <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Turning Sequence <input type="checkbox"/>     |  |  |                                              |  |
| Past Expiry Date <input type="checkbox"/>                    | Manufacturing Process <input type="checkbox"/> | OTHER :                                                                                                                                                                            |                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                               |  |  |                                              |  |
| Misidentified <input type="checkbox"/>                       | Past Due <input type="checkbox"/>              |                                                                                                                                                                                    |                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                               |  |  |                                              |  |

# Picklist Print

Tuesday, July 12, 2016 8:49:51 AM

Page 4

Work Order ID: 148854

**\*148854\***

Parent Item: D412-786-013

**\*D412-786-013\***

Parent Item Name: Fwd Hardpoint Installation

Start Date: 7/21/2016

Required Date: 7/27/2016

Start Qty: 1.00

Required Qty: 1.00

NAS1149D0332J

Purchased

No

Each

1,794.000

**\*NAS1149D0332.I\***

Washer

**\*\***

10  
X M135 046 PC

DAS  
27  
088

Location

Loc Qty

Loc Code

CA

6

m129682

6

FP001

562

m134848

562

GA

987

m135046

987

ST264

239

~~m134592~~

6

m134738

233

10

AUG 19 2016

DQA: \_\_\_\_\_ Date: \_\_\_\_\_



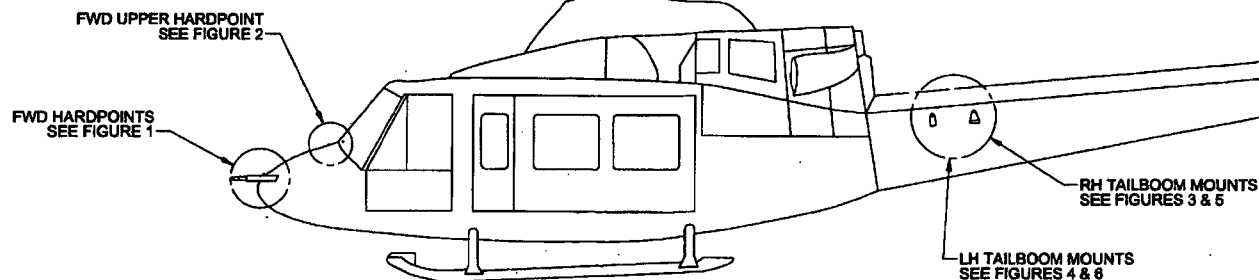
## WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: \_\_\_\_\_ Date: \_\_\_\_\_

Work Order update only ☐

|                                                              |  |                                                                                                                                                                                    |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |  |                                                                                                                                                                                                                                        |  |  |
|--------------------------------------------------------------|--|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|
| Work Order: _____<br><br>Part No. _____<br><br>NCR No. _____ |  | <b>DISPOSITION</b><br><br>Rework <input type="checkbox"/><br>Scrap <input type="checkbox"/><br>Use-as-is <input type="checkbox"/><br>Suspected Unapproved <input type="checkbox"/> |  | <b>AGAINST DEPARTMENT/PROCESS</b><br><br><div style="display: flex; justify-content: space-between;"> <div>             Skid-tube <input type="checkbox"/><br/>             Machining <input type="checkbox"/><br/>             Thermoforming <input type="checkbox"/><br/>             Large Fab <input type="checkbox"/> </div> <div>             Cross tube <input type="checkbox"/><br/>             Small Fab <input type="checkbox"/><br/>             Finishing <input type="checkbox"/><br/>             Composite <input type="checkbox"/> </div> <div>             Water Jet <input type="checkbox"/><br/>             Prod. Eng. Coord. <input type="checkbox"/><br/>             Rec/Store/Packaging <input type="checkbox"/><br/>             Supplier <input type="checkbox"/> </div> <div>             Engineering <input type="checkbox"/><br/>             Quality <input type="checkbox"/><br/>             Other <input type="checkbox"/> </div> </div> |  |  |                                                                                                                                                                                                                                        |  |  |
| Date : _____                                                 |  | Step #: _____                                                                                                                                                                      |  | QTY Effective : _____                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  |  | <b>MRB (QSI042) Approval</b><br><br><div style="border: 1px solid black; height: 150px; margin: 5px;"></div> <b>Completed By</b><br><br><b>Lead hand / Supervisor Approval Verification</b><br><br><b>QC / QA Coordinator Approval</b> |  |  |
| <b>Description Work Order Deviation</b>                      |  |                                                                                                                                                                                    |  | <b>Disposition</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |  |  |                                                                                                                                                                                                                                        |  |  |
|                                                              |  |                                                                                                                                                                                    |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |  |                                                                                                                                                                                                                                        |  |  |
|                                                              |  |                                                                                                                                                                                    |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |  |                                                                                                                                                                                                                                        |  |  |

| Root Cause                                  |                                                |                                                 | FAULT CATEGORY                                             |                                                |                                               |
|---------------------------------------------|------------------------------------------------|-------------------------------------------------|------------------------------------------------------------|------------------------------------------------|-----------------------------------------------|
| Environment <input type="checkbox"/>        | No Re-verification <input type="checkbox"/>    | Pressure/Forced <input type="checkbox"/>        | Temperature/Cure <input type="checkbox"/>                  | Power Loss/Surge <input type="checkbox"/>      | Positioned Wrong <input type="checkbox"/>     |
| Design <input type="checkbox"/>             | Operator <input type="checkbox"/>              | Bending <input type="checkbox"/>                | Set-up <input type="checkbox"/>                            | Folio/Program <input type="checkbox"/>         | Outside Dimensions <input type="checkbox"/>   |
| Doc/Data <input type="checkbox"/>           | Offset/Setup <input type="checkbox"/>          | Centre Not Concentric <input type="checkbox"/>  | BOM/Route <input type="checkbox"/>                         | Grain <input type="checkbox"/>                 | Over/Under tolerance <input type="checkbox"/> |
| Equip/Tooling <input type="checkbox"/>      | Supplier <input type="checkbox"/>              | Cracks <input type="checkbox"/>                 | Broken/Damage/Defect <input type="checkbox"/>              | Weld <input type="checkbox"/>                  | Part Incorrect <input type="checkbox"/>       |
| Handling/Pre <input type="checkbox"/>       | Training <input type="checkbox"/>              | Crimp/Kink/Ripple/Wave <input type="checkbox"/> | Inspection Incomplete/Unqualified <input type="checkbox"/> | Wrong Stock Pulled <input type="checkbox"/>    | Part Lost/Missing <input type="checkbox"/>    |
| Material <input type="checkbox"/>           | Use for Testing <input type="checkbox"/>       | Cuffs <input type="checkbox"/>                  | Contamination <input type="checkbox"/>                     | Out of Sequence <input type="checkbox"/>       | Part Moved <input type="checkbox"/>           |
| Internal Transport <input type="checkbox"/> | Poor Information <input type="checkbox"/>      | Crushing <input type="checkbox"/>               | Countersink <input type="checkbox"/>                       | Off-set <input type="checkbox"/>               | Drawing <input type="checkbox"/>              |
| Tribal Knowledge <input type="checkbox"/>   | Rushing <input type="checkbox"/>               | Heat Treat <input type="checkbox"/>             | Cut Too Short <input type="checkbox"/>                     | Mislabeled <input type="checkbox"/>            | Finish <input type="checkbox"/>               |
| LOA <input type="checkbox"/>                | Product Improvement <input type="checkbox"/>   | Wave/Twist in Tube <input type="checkbox"/>     | Instructions Incomplete/Unclear <input type="checkbox"/>   | Fit/Function <input type="checkbox"/>          | Misread <input type="checkbox"/>              |
| Substation <input type="checkbox"/>         | Process Improvement <input type="checkbox"/>   | Marks/Chatter <input type="checkbox"/>          | Drill Holes <input type="checkbox"/>                       | Misaligned/off center <input type="checkbox"/> | Turning Sequence <input type="checkbox"/>     |
| Past Expiry Date <input type="checkbox"/>   | Manufacturing Process <input type="checkbox"/> | <b>OTHER :</b> _____                            |                                                            |                                                |                                               |
| Misidentified <input type="checkbox"/>      | Past Due <input type="checkbox"/>              |                                                 |                                                            |                                                |                                               |



#### D412-786-011/-021 HARDPOINT KIT

| QTY -011 | QTY -013 | QTY -015 | QTY -021 | QTY -025 | PART NUMBER   | DESCRIPTION         |
|----------|----------|----------|----------|----------|---------------|---------------------|
| X        |          |          |          |          | D412-786-011  | HARDPOINT KIT       |
| 1        | X        |          | 1        |          | D412-786-013  | FWD HARDPOINT KIT   |
| 1        |          | X        |          |          | D412-786-015  | TAILBOOM MOUNT KIT  |
|          |          |          | X        |          | D412-786-021  | HARDPOINT KIT       |
|          |          |          | 1        | X        | D412-786-025  | TAILBOOM MOUNT KIT  |
|          |          | 1        |          |          | D3866-041     | TAILBOOM MOUNT      |
|          |          | 2        |          |          | D3866-043     | TAILBOOM MOUNT      |
|          | 1        |          |          |          | D3870-041     | FWD LH HARDPOINT    |
|          | 1        |          |          |          | D3870-042     | FWD RH HARDPOINT    |
|          | 1        |          |          |          | D3870-5       | FWD UPPER HARDPOINT |
|          | 1        |          |          |          | D3871-1       | DOUBLER             |
|          | 1        |          |          |          | D3871-2       | DOUBLER             |
|          |          |          |          | 1        | D4950-041     | TAILBOOM MOUNT      |
|          |          |          |          | 2        | D4950-043     | TAILBOOM MOUNT      |
|          | 10       | 12       |          | 12       | MS21042L3     | NUT                 |
|          | 8        | 12       |          | 12       | MS27039-1-11  | SCREW               |
|          | 1        |          |          |          | MS27039-1-12  | SCREW               |
|          | 1        |          |          |          | MS27039-1-14  | SCREW               |
|          | 10       | 24       |          | 24       | NAS1149D0332J | WASHER              |

| INSTALLATION                       | WEIGHT              | LONGITUDINAL         |                           | LATERAL             |                            |
|------------------------------------|---------------------|----------------------|---------------------------|---------------------|----------------------------|
|                                    |                     | ARM                  | MOMENT                    | ARM                 | MOMENT                     |
| D412-786-011<br>HARDPOINT KIT      | 0.68 LBS<br>0.28 KG | 164.67 IN<br>4.18 M  | 95.51 IN-LB<br>1.09 KG-M  | -1.26 IN<br>-0.03 M | -0.73 IN-LB<br>-0.008 KG-M |
| D412-786-013<br>FWD HARDPOINT KIT  | 0.22 LBS<br>0.10 KG | -13.55 IN<br>-0.34 M | -2.98 IN-LB<br>-0.03 KG-M | 2.38 IN<br>0.06 M   | 0.52 IN-LB<br>0.008 KG-M   |
| D412-786-015<br>TAILBOOM MOUNT KIT | 0.36 LBS<br>0.16 KG | 273.58 IN<br>6.95 M  | 98.49 IN-LB<br>1.11 KG-M  | -3.47 IN<br>-0.09 M | -1.25 IN-LB<br>-0.01 KG-M  |
| D412-786-021<br>HARDPOINT KIT      | 0.64 LBS<br>0.29 KG | 164.67 IN<br>4.18 M  | 105.39 IN-LB<br>1.21 KG-M | -1.25 IN<br>-0.03 M | -0.08 IN-LB<br>-0.01 KG-M  |
| D412-786-025<br>TAILBOOM MOUNT KIT | 0.42 LBS<br>0.19 KG | 273.58 IN<br>6.95 M  | 114.90 IN-LB<br>1.32 KG-M | -3.47 IN<br>-0.09 M | -1.46 IN-LB<br>-0.02 KG-M  |

|            |                                                                                                           |    |          |
|------------|-----------------------------------------------------------------------------------------------------------|----|----------|
| C          | MODIFY D3870-5 INSTALLATION INSTRUCTION, ADD TO NOTE 2, SH 3 AND CLARIFY/CORRECT VIEW C-C (ZN A6-3, C3-3) | DB | 14.04.28 |
| B          | ADD -021/-025 KITS, SHEETS 6 & 7                                                                          | DB | 13.10.17 |
| A          | NEW ISSUE                                                                                                 | DB | 09.01.14 |
| REV        | DESCRIPTION                                                                                               | BY | DATE     |
| DESIGN     | DB                                                                                                        |    |          |
| DRAWN      | DB                                                                                                        |    |          |
| CHECKED    | DB                                                                                                        |    |          |
| MFG. APPR. | N/A                                                                                                       |    |          |
| APPROVED   | N/A                                                                                                       |    |          |
| DE APPR.   | N/A                                                                                                       |    |          |
| DATE       | 14.04.28                                                                                                  |    |          |

|                                                                                                                                                                                                                                                                  |                        |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|
| <b>DART AEROSPACE LTD</b><br>HAWKESBURY, ONTARIO, CANADA                                                                                                                                                                                                         |                        |
| DRAWING NO.<br><b>D412-786-1</b>                                                                                                                                                                                                                                 | REV. C<br>SHEET 1 OF 7 |
| TITLE<br><b>HARDPOINT KIT INSTALL</b>                                                                                                                                                                                                                            |                        |
| SCALE<br>NTS                                                                                                                                                                                                                                                     |                        |
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#### NOTES:

- 1) D412-786-011/-021 HARDPOINT KIT REQUIRED ON 412/412EP AIRCRAFT UTILIZING D412-695-011 BLADE FOLDING KIT WHERE WIRE STRIKE COMPATABILITY IS REQUIRED
- 2) D412-786-021 HARDPOINT KIT REQUIRED ON AIRCRAFT EQUIPPED WITH BLR TAILBOOM STRIKE KIT
- 3) TOUCH UP DRILLED HOLES WITH ALODINE PER THE AIRCRAFT MAINTENANCE MANUAL
- 4) TORQUE FASTENERS AS FOLLOWS: 10-32; 20-26 IN-LBS
- 5) PRIME AND PAINT HARDPOINTS TO MATCH AIRCRAFT PAINT SCHEME PER AIRCRAFT MAINTENANCE MANUAL

# Work Order ID 148854

\*148854\*

Page 1

Tuesday, July 12, 2016 8:49:51 AM

Item ID: D412-786-013

Accept

\*N900040100\*

Setup Start \*NS1\*

Revision ID:

Stop \*NS2\*

Item Name: Fwd Hardpoint Installation

Start Date: 7/21/2016 Start Qty: 1.00

\*1\*

Required Date: 7/27/2016 Req'd Qty: 1.00

\*1\*

Cust Item ID:

Customer:

Reference:

Approvals: Process Plan: DAS

21

Date: JUL 13 2016

Tooling:

Date:

Run Start \*NR1\*

QC: 0-89

Date:

SPC (Y/N):

Date:

Stop \*NR2\*

Sequence ID/  
Work Center ID

Operation  
Description

Set Up/  
Run Hours

Tool ID

Tool #

Plan  
Code

Accept  
Qty

Reject  
Qty

Reject  
Number

Insp.  
Stamp

Draw Nbr

Revision Nbr

D412-786-1

C

label DAS 6 19/8/16

100

Document Control

0.00

\*100\*

DAS

21

9-89

AUG 19 2016

DC

Memo

0.00

Doc.Control -USB or Paperwork

Photocopy bluefile and create labels per PPP D412-786-013 chg001

110

Pick Kit

0.00

\*110\*

Packaging

Memo

0.00

Packaging

120

QC4- 100% Inspect kits for completeness

0.00

\*120\*

QC

Memo

0.00

Quality Control